

temperature with great facility, and without withdrawing his attention from his instrument. It is presumed that the water and the outer edge of the gold cup will be of the same temperature; for after the liquids at different temperatures have passed through, and over the copper vessel, *C*, they will be well mixed before acting on the bulb of the thermometer, or the edge of the cup.

By the stopcock *y* the water, if it be too cold or too hot, can be easily run off into a waste cup.

By this arrangement, though I have not yet proved it by actual observation, it is believed that the dew point can be obtained with minute accuracy, say within 0.10° .

The instrument is easily portable. All the parts can be unscrewed and packed away; and it does not render necessary the use of a liquid like ether, which is very difficult to carry, and which wastes and deteriorates rapidly during the summer in this country.

ART. X.—*Account of some New Australian Plants.* By
DR. FERDINAND MUELLER.

[Read before the Institute, 5th August, 1857.]

MR. PRESIDENT AND GENTLEMEN—It is not without hesitation that I submit to the Institute a limited number of plants, which have, perhaps, no other claims on your attention but their novelty; and I should have retained them for publication in a Phytological Journal, but for a desire of recognizing publicly in Australia the recent contributions of some scientific friends towards our knowledge of the indigenous vegetation. It offers, however, likewise, the opportunity to show how much the wonderful works of Nature remain to be revealed in our own country.

Some of the plants which I have the honor to exhibit are selected from a Herbarium formed by Mr. Hill, the Superintendent of the Brisbane Botanic Gardens, a gentleman of keen observation, and great ardour for botanical research. Others were communicated by Mr. Charles Stuart, who succeeded last season in forcing his way into 'the wilderness of Mount Lapérouse, in South-western Tasmania, and through whose exertions new features of its alpine flora have been unveiled. Others of these plants were discovered during a journey through the Grampians, performed by my zealous

assistant, Mr. Wilhelmi, under the auspices of our Government. For some of these novelties I remain indebted to other gentlemen; and I can only regret that I was not enabled to bring on this occasion their merits more prominently before the Institute in a fuller display of their kind communications.

Only a few of the species are obtained by myself, principally salt bushes,—insignificant in their appearance, but invaluable in the desert for the subsistence of sheep-flocks. These were procured already, in 1851, near Lake Torrens, a locality which quite of late attracted so much interest, through Mr. Babbage and Mr. Goyder's enterprises.

And when the discovery of an extensive saltwater lake, in a position formerly assigned to the saline basin of Lake Torrens, was hailed with universal delight, and when this new approach to Central Australia in that direction augurs so well for the future, we can be but animated with ardent wishes for the welfare of the expeditions now engaged in the geographical exploration of the interior of South Australia.

I had, in distinguishing some of the more interesting of these plants, the pleasant opportunity of attaching to several of them the names of members of the Philosophical Institute, not only as a token of personal respect, but also as an appreciation of their services rendered to this society, and as a slight acknowledgment of the disinterested manner in which they fostered and cultivated science in this country.

MONIMIEÆ.

Hedycarya Pseudomorus.

(*H. dentata* var. *Australasica*, Sonder in *Linnæa* xxviii. p. 228 non Forster.)

Leaves long petiolated, ovate or lanceolate, acuminate, opposite and alternate; stigma depressed, minutely umbonate; carpels small, numerous, sessile, densely crowded, yellow.

In the forests from Cape Otway to Wilson's Promontory, and probably also in New South Wales.

I regarded this plant formerly as the type of a new genus, and I am indebted to the venerable maccen, Sir William Hooker, for information on its correct generic position. The learned Dr. Sonder referred it to *Hedycarya dentata* from New Zealand, not having seen its fruit. It is not a little surprising, that hitherto, of the numerous New Zealandian

forest trees, only *Pomaderris elliptica* and *Fagus fusca* (the black birch of the New Zealand colonists) have been identified with Australian or Tasmanian trees, whilst, according to Dr. Hooker's flora of New Zealand, many of the shrubs, and a considerable portion of the herbaceous plants, proved identical with ours.

Wilkiea.

Flowers unisexual, female ones racemose apetalous; male ones unknown. Calyx subglobose, perforated at the apex, circumcised; germens numerous, sessile; styles none; stigma depressed, conical; carpels drupaceous, succulent, borne by the fleshy calyx; embryo minute at the base of a copious albumen.

A tree of eastern subtropical Australia, with exception of the ovaries smooth, with opposite short stalked coriaceous oblong or lanceolate ovate leaves, which are remotely serrated or entire, with a yellow calyx and black drupes.

I distinguish this interesting genus most regardfully with the name of one of the Vice-Presidents of the Institute, and regret that the specimens in my possession do not admit of a more perfect characteristic.

Wilkiea calyptrocalyx.

On subsaline banks of the Brisbane River. Hill & Mueller.

SAPINDACEÆ.

Nephelium tomentosum.

(Sect. *Arytera.*)

Branchlets, rachis of leaves and panicles brownish-tomentose; leaves on short petioles; leaflets in two to four pairs, opposite, oblique ovate, or ovate lanceolate, acuminate, serrated, above at last glabrous, beneath downy, with very short stalks; terminal pair the largest; panicles axillary and lateral; divisions of the calyx 5, acute; style trifid at the apex, carpels twin or ternate, ovate globose, often somewhat compressed, tomentose.

On the Brisbane River. Hill & Mueller.

A middle-sized beautiful tree.

RUTACEÆ.

Boronia granulata.

(Sect. Zieria.)

Branchlets nearly glabrous, densely tubercled; leaves all trifoliolate, short stalked; leaflets linear, with revolute margin, like the petiols scantily tubercled, above glabrous, beneath velutinous; cymes pedunculate, many flowered, shorter than the leaf, puberulous; segments of the calyx deltoid-ovate, acuminate, three or four times shorter than the petals; stamens and style nearly smooth; stigma four-lobed; anthers roundish; carpels blunt.

Interior of New South Wales. Sir Thomas Mitchell.

XANTHOXYLÆ.

Xanthoxylon brachyacanthum.

(Sect. Rhetsa.)

Glabrous, branchlets and peduncles furnished with short straight prickles; leaves alternate, unarmed, with 3 to 5 pairs of leaflets, and a wingless rachis; leaflets short-stalked, ovate or broad lanceolate, blunt acuminate, entire or somewhat repand; panicles much shorter than the leaves.

In the Araucaria forests of Moreton Bay. Hill & Mueller.

BUETTNERIACEÆ.

Lasiopetalum Wilhelmii.

Leaves oblong-lanceolate, rounded at the base, flat at the margin, above glabrous, beneath velvety; cymes with crowded flowers and short peduncles; lower bracteole linear; segments of the upper bracteole lanceolate, of equal length; calyx longer than the bracteole, outside velvety, inside glabrous, with ovate-deltoid segments; anthers bursting at their whole length; germen trilocular, velvety; style smooth at the apex.

On the summit of the northern mountains of the Grampians. Wilhelmii.

A species, like *L. micranthum*, somewhat abnormal, in bivalved anthercells.

ELATINÆ.

Bergia tripetala.

Annual, procumbent, glandless; stems and branches downy; leaves lanceolate-ovate, minutely serrated, smooth; verticills many-flowered; pedicels glabrous, shorter or as long as the calyx; flowers trimerous; petals ovate, blunt, somewhat longer than the calyx; stigmas very short; capsule slightly furrowed, longer than the calyx, with very thin dissepiments; seeds brown; testa latticed.

At the confluence of the rivers Murray and Darling.

Three other species of this genus are discovered in tropic Australia, during Mr. Gregory's expedition.

EUPHORBIACEÆ.

Pseudanthus ovalifolius.

Leaves oval, rarely oblong or orbicular, opposite or crowded, on very short petioles, at the mid-rib scabrous; segments of the male flowers spathulate, linear; exterior filaments twice or three times longer than the anthers, interior ones many times longer than the globose ovate anther-cells.

In vallies at the Grampians, the Serra and Victoria ranges. C. Wilhelmi.

ROSACEÆ.

Geum renifolium.

(Sieversia.)

Root without runners; stem simple, one-flowered, with simple and with short jointed glandbearing downs; stipules broad, ciliated, in front toothed; leaves hirsute, radical ones pinnatisected; lateral segments in one to three pairs, minute or wanting, terminal one large, kidney-shaped, crenate and short-lobed; leaves of the stem small, distant, cordate, or orbicular ovate, deeply toothed; bracteoles oblong-lanceolate, nearly emarginate, half as long as the calyx; segments of the calyx broad-ovate, nearly acuminate, outside hirsute; petals awns half-exserted, hairy, not jointed, at the revolute apex naked.

On Mount Lapérouse, Van Diemen's Land. Stuart and Oldfield.

Rubus Moorei.

Shrubby, diœcious; branches terete, as well as the petioles copiously beset with reflexed short prickles; leaflets palmate; leaflets five or three, stalked, ovate or lanceolate-ovate, acute, on both pages of equal colour, above glabrous, beneath velvety-tomentose, mucronulate-serrulated, at the rounded base entire; stipules linear, deciduous, teethless; panicles axillary, on very short peduncles, with minute prickles; bracts ovate, acuminate; segments of the tomentose calyx ovate, blunt, equal, shorter than the corolla, but longer than the stamens.

Clarence River. C. Moore.

It differs from the New Zealandian *Rubus Australis* in shorter acute, but not acuminate leaves, in ovate bracts, in a larger calyx, and in stamens shorter than the calyx.

The fruit is, according to Mr. Moore, blackish-red.

Rubus Hillii.

Shrubby, hermaphrodite; branches terete, grey-tomentose, as well as the petioles beset with reflexed short prickles; leaves simple, cordate, with three to five short acuminate, somewhat angular lobes, above scantily hairy, beneath grey-velutinous, at the margin short toothed; teeth unequal, acute; nerves and innovations ferrugineous; stipules and bracts fringelike-lacinated, together with the calyx silky-tomentose; panicles at last much spreading; calyx as long as the petals; its divisions acuminate, the inner ones smaller.

On the Brisbane River. Hill.

Allied to *R. Lambertianus* (Ser. in D. C. prodr. ii., 576).

MYRTACEÆ.

Lysicarpus.

Tube of the calyx bellshaped, below connate with the base of the ovary; limb five-lobed; petals five, inserted to a ring, which surrounds the faux of the calyx; stamens numerous, free; outer ones sterile, longer than the petals, with rather large inapert anthers; inner ones thinner, nearly as long as the corolla, with round bi-celled anthers, which open by longitudinal slits; anthers all dorsifixed, with a terminal minute gland; ovary three-celled, with numerous ovules; style cylindrical; stigma

short-bilobed; capsule ovate, half emersed, loose, three-celled; its valves thin; seeds small, numerous.

A tree of eastern subtropical Australia, with generally ternate linear at the margin revolute exstipulate leaves, and with axillary and terminal pedunculate white flowers.

A genus allied to *Metrosideros* and *Pericalymma*.

Lysicarpus ternifolius.

On low mountains between the Dawson and Mackenzie River. Also on Darling Downs according to a specimen communicated by Mr. C. Moore.

This tree is esteemed for its excellent timber.

LEGUMINOSÆ.

Euchilus cuspidatus.

(*Spadostylis.*)

Tall, much branched; branchlets thin, downy; leaves small, ternate, heart-shaped, nearly sessile, cuspidate, mucronate, flat, glabrous, entire; stipules setaceous, persistent, much shorter than the leaves; pedicels thread-like, the fruit-bearing ones a little longer than the leaves; bracteoles linear-setaceous, scarcely shorter than the calyx; lower lip of the calyx much reflexed, but little longer than the other; pod turgid, ovate, glabrous, sessile.

On forest ridges around Moreton Bay. Hill and Mueller.

ARALIACEÆ.

Panax elegans, Moore and Mueller.

Arborescent, unarmed; leaves long, simply or double pinnate; leaflets in three to seven pairs, opposite, ovate, acuminate, acute at the base, entire, veined, glabrous, shining above, paler and opaque beneath; racemes very numerous, spreading, collected in one ample decomposed panicle; peduncles thinly velutinous; flowers puberulous, longer than the pedicels; styles very short, scarcely recurved; berries round, compressed, two-rarely three-celled.

Richmond River. C. Moore. Moreton Bay. Hill and Mueller.

A magnificent plant, attaining a considerable size. Its timber was exhibited at Paris, under the name *Aralia elegans*.

COMPOSITÆ.

Senecio drymophilus.

Perennial, erect, scarcely branched, pubescent; leaves succulent, oblong or obovate-spatulate, almost entire or remotely toothed, flat; inferior ones tapering into a petiol; superior ones clasping with a cordate base; peduncles long, terminal, one- or few-headed, with distant bracts; scales of the cylindrical involucre 12-16, acute, nearly as long as the disk; ligules wanting; achenes thin, cylindrical, brown, smooth, streaked, half as long as the pappus.

In irrigated forest-valleys of Moreton Bay. Hill and Mueller.

Senecio primulifolius.

Perennial; stem simple, erect or ascending, at the base silky-tomentose; radical leaves crowded, blunt, cordate ovate, repand, stalked; beneath or on both sides cobwebbed; stem-leaf solitary, clasping, oblong or pandurate, sharply toothed; peduncles two or three, terminal, with a leaflike bract, woolly; involucre broad bellshaped, with 16-18 lanceolate-linear leaflets, scantily cobwebbed, twice as long as its laxe bracts, and of equal length with the disk, bearded at the apex; ligules several, conspicuous; achenes glabrous, nearly three times shorter than the pappus.

On Mount Laperouse, south-western Tasmania. C. Stuart, A. Oldfield.

Senecio papillosus.

Perennial; stem simple, pubescent, densely hairy at the base, with a solitary flowerhead; radical leaves small, crowded, spatulate-ovate, entire, gradually tapering into the petiol, with slightly reflexed margin, above from papills very rough, beneath imperfectly hairy; stem-leaves narrow or linear-lanceolate, sessile, scarcely toothed; involucre almost hemispherical; leaflets 20 to 22 lanceolate linear, at the apex sphacelate and bearded, at the back scantily hairy and papillose, as long as the disk; bracts half or nearly as long as the involucre, appressed, ligules several, conspicuous; achenes glabrous, of half the length of the pappus.

On Mount Lap erouse, Van Diemen's Land. C. Stuart, A. Oldfield.

Trineuron scapigerum.

Erect; stem scapelike, puberulous; leaves lanceolate- or spatulate-linear, acute; radical ones crowded, tapering into a fringed petiol; stem-leaf solitary, like the bract sessile, their lateral nerves obliterated; flowerheads a few, terminal, densely crowded, or forming a corymb with leafy bracts; leaflets of the involucre 8-12, oblong, with three pellucid nerves, hardly coriaceous; all flowers four-toothed; style of the female flowers short-bifid, of the male ones scarcely divided.

With the two preceding plants, discovered by C. Stuart and A. Oldfield.

GOODENIACEÆ.

Goodenia teucrifolia.

Annual, pubescent; stems slender, procumbent; leaves short-stalked, nearly membranous, ovate lanceolate, or the upper ones narrow lanceolate, all acute, serrated; peduncles axillary, 1-3-flowered, pedicels with two bracteols; segments of the calyx nearly setaceous, as long as the tube; corolla glabrous; style almost smooth; ciliæ of the indusium very short; capsule small, ovate, or nearly globose; dissepiment scarcely half the length of the valves; seeds few, small, ovate-oblong, shining, brownish yellow, comparatively thick, with subtil dots, and a thin margin.

In the fissures of rocks, on the Glasshouse mountains of Moreton Bay. Hill and Mueller.

Goodenia amplexans.

Suffruticose, erect, glandulous-pubescent; branches terete, foliate; leaves oblong or ovate, with a heartshaped clasping base, sessile, acute, minutely toothed; flowers solitary, two or three, axillary; peduncles shorter than the tube of the calyx, bractless; segments of the calyx linear-subulate, a little shorter than the calyx; style villose; indusium conspicuously ciliate; anthers blunt; capsule ellipsoid ovate, to a third of its length bilocular; cells few-seeded; seeds livid, marginate, nearly smooth.

Ridges and gullies near Adelaide.

APOCYNEÆ.

Parsonsia. R. Brown.

(Sect. Gastranthus.)

Calyx without scales; lobes of the corolla in preflourescence valvate, tube ventricose, faux bearded; filaments free;

anthers dilated at the base, with blunt short lobes; hypogynous disk crenated.

Parsonsia ventricosa.

Climbing, leaves almost membraneous, ovate or lanceolate, long acuminate, short-stalked, with rounded or emarginate base, smooth; umbells nearly capitate; peduncles slender, as well as pedicels and calyces puberulous; calyx deeply five-cleft, with rhomboid ovate pointed segments, half as long as the corolla tube; lobes of the corolla lanceolate, acuminate, of the length of the tube, glabrous; filaments much shorter than the half exerted anthers.

Vallies of the Pine River. Hill and Mueller.

Melodinus, Forster.

(Sect. *Dichostemma.*)

Faux of the corolla with a double series of bifid scales, five in each series; upper ones inserted to the base of the corolla lobes, alternate with the inferior larger ones.

Melodinus acutiflorus.

Leaves lanceolate, flat, entire, blunt-acuminate, above glabrous shining, beneath paler, puberulous; primary veins distant, divided, spreading; peduncles axillary, with two or three rarely single flowers, downy; bracts lanceolate subulate; segments of the calyx lanceolate, long pointed; lobes of the corolla lanceolate linear, acute; faux densely bearded.

On the Brisbane River. Hill and Mueller.

SCROPHULARINÆ.

Eadesia.

Calyx bell-shaped, five-cleft; corolla campanulate, somewhat funnel-shaped, five-cleft, indistinctly lipped; lobes oblong, the upper two broadest; stamens four, inserted to the base of the corolla, inclosed, two longer; anthers kidney-shaped, one-celled, attached with their back to the linear filaments; style simple, filiform; stigma dilated; capsule globose ovate, two-celled, loculicidal; valves bifid at the apex; seeds in each cell one or two, fixed to the base of the free dissepiments, kidney-shaped, scrobiculate.

A shrub of Southern Australia, with velutinous branches, with alternate lanceolate flat nearly glabrous undivided leaves, which are articulated at the base, sessile or short

stalked, with short axillary or terminal one or few-flowered peduncles, and nearly white flowers.

This pretty genus, to which I attached the name of our friend Dr. Rich. Eades, differs from *Anthocercis* in a nearly bilabiate corolla, one-celled anthers, and few-seeded capsule.

Eadesia anthocercidea.

Shady places in the ranges near Mount Zero. C. Wilhelmi.

PROTEACEÆ.

Macadamia.

Flowers hermaphrodite, symmetrical, in racemes; sepals four, spatulate linear, recurved at the apex, deciduous; stamens four, inserted near the middle of the sepals; filaments longer than the anthers; connective protruding beyond the linear anther cells; hypogynous annulus denticulated; germen sessile; style filiform, deciduous; stigma vertical, continuous, blunt, upwards but slightly thickened; capsule nearly woody, dehiscent on one side; seeds unknown.

A tree of oriental subtropical Australia, with leaves three in a whorl or rarely opposite, lanceolate or oblong, flat, with pointed teeth, or above the base entire, net-veined, with stomata at the lower side; racemes terminal pedunculate; flowers twine, with a solitary bract.

A beautiful genus, allied to *Adenostephanus*, *Orites* and *Xylomelum*, dedicated to John Macadam, Esq., M.D., the talented and deserving Secretary of our Institute.

Macadamia ternifolia.

In forests on the Pine River of Moreton Bay. Hill and Mueller.

EXPLANATION OF THE PLATE.—1. Bract and pedicels. 2. Unexpanded flower. 3. Half-expanded flower. 4. Expanded flower. 5. Germen and annulus. 6 7 8. Anthers. 9 10. Fruit (natural size). All parts, except 9 and 10, more or less magnified.

Grevillea Hilliana.

Branchlets brown silky, leaves large, ovate oblong, blunt, entire or pinnatifid, cuneate at the base, flat, net-veined, above glabrous, beneath silvery-silky; their segments oblong lanceolate; racemes axillary and lateral, solitary, pedunculate, silky, densely many-flowered; bracts minute, lanceolate, deciduous; calyx small, inside and style gla-



Luchuaq Becker Del. et Lith.

H. Friend, Imp.†

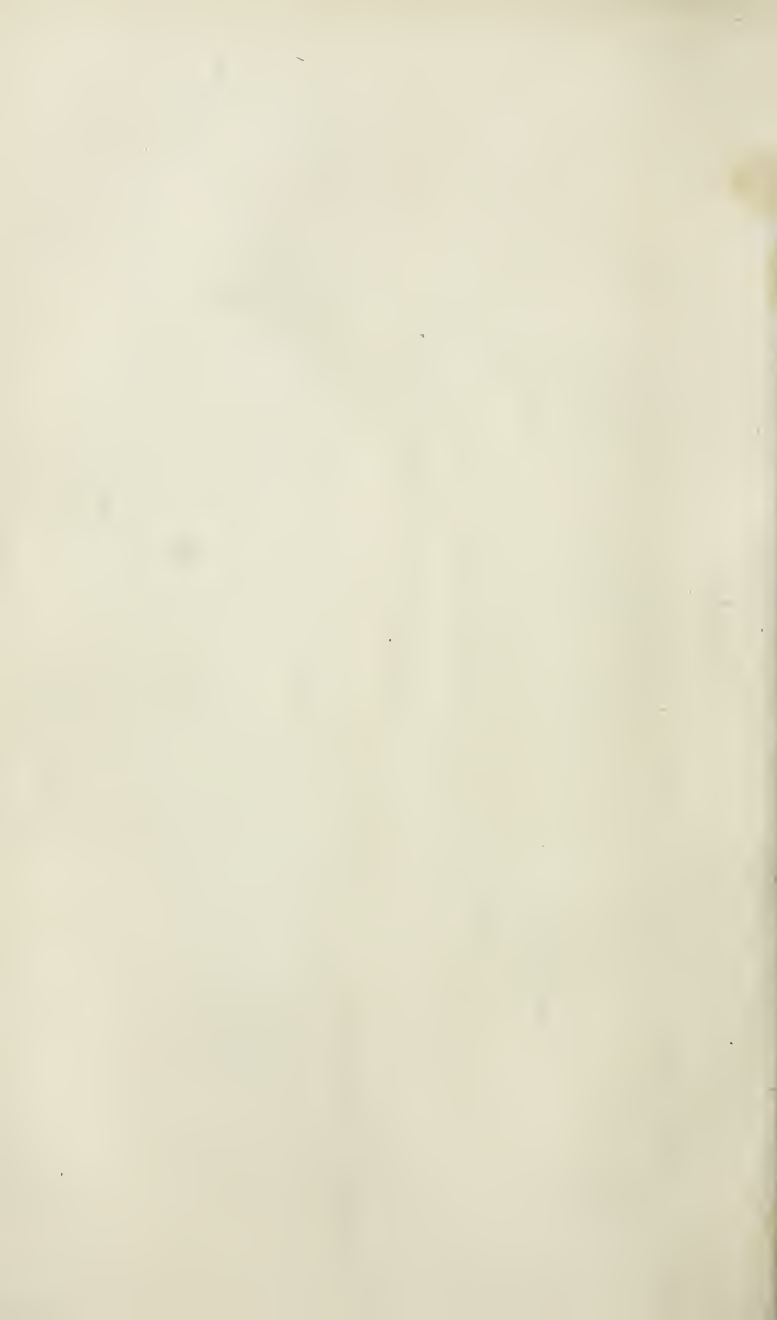
MACADAMIA TERNIFOLIA. FERD. MUELLER.





MELOCACTUS VIRIDIFLORUS

(Nahuatl name)



brous; stigma orbicular, nearly lateral, umbonate at its centre.

In forests at the Pine River of Moreton Bay. Hill and Mueller.

A magnificent forest tree, which I wished to bear the name of its discoverer, Mr. Walter Hill, the Director of the Botanic Gardens of Brisbane.

POLYGONÆ.

Polygonum Linné.

(Sect. Homalocladium.)

Branches flat, almost leafless; flowers axillary; calyx five-cleft; stamens 7-8; styles 3; stipules minute.

Polygonum patycladum.

Perennial, glabrous; stem erect, towards the base nearly terete, near the branches compressed; branches quite compressed, leaflike, articulated, streaked, nearly transparent, either leafless or with a few oblong or hastate lanceolate leaves, which are short stalked and acute at the base; bracts and stipule short, with fringeless margin; flowers solitary, or a few lateral; styles at the base joined.

On moist places of New Caledonia. Shepherd.

Although the fruit is unknown, and the plant so dissimilar to other *Polygonums*, there can be scarcely a doubt of its belonging to this genus. In habit it resembles some leafless flat-branched *Phyllanthi*.

SALSOLACEÆ.

Blitum cristatum.

Procumbent, somewhat downy and glandulous; stems imperfectly streaked; leaves on long petioles, rhomboid or oblong ovate, acute, at the base blunt, at the apex with blunt teeth; glomerules axillary, many-flowered; fruit-bearing calyx dry, closed, acuminate, with cristate wings; seeds smooth and shining, with a nearly acute margin.

In the desert on the Murray, Darling and Lake Torrens. Allied to *B. carinatum*.

Rhagodia nitrariacea.

Shrubby, erect or diffuse; branches spreading or reclined; branchlets divaricate, grey, spinescent; leaves alternate fasciculate, oblong- or spathulate-linear, blunt, quite